Newsletter of the North Dakota Nonpoint Source Pollution Task Force

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Harmon Lake - Otter Creek Watershed Festival Promotes Good Stewardship

There are very few times when you can prepare people to be good stewards of a lake before the lake actually exists. However, the Morton County Soil Conservation District and Water Resource Board realized they have that opportunity with the Harmon Lake project north of Mandan, N.D. As a first step toward responsible stewardship of the proposed lake, they co-hosted the first Harmon Lake - Otter Creek Watershed Festival Sept. 11, 2004. Although it was a cool, blustery day, about 75 people from throughout the watershed attended the event.

The festival was designed to inform people about the project, the watershed and what they can do to improve the quality of the water that runs off the landscape. Jim Collins with the North Dakota Department of Health Division of Water Quality provided information regarding best management practices (BMPs). BMPs can take many forms, ranging from picking up pet waste to managing livestock waste and from properly fertilizing lawns to conservation tillage in a field.

"A lake is only as good as the water that enters it from the watershed." *- Jim Collins, North Dakota Department of Health Division of Water Quality*

Other speakers covered a wide range of topics including a history of the Harmon Lake area, construction plans for the dam, zoning laws in the watershed, archaeological finds, plans for park development and management and education on the watershed and homeowner BMPs.

After a hot lunch, participants were encouraged to visit five interactive stations that were set up overlooking the future lake. Mark Glaser from the Department of Health demonstrated how a watershed works and the effects of point source and nonpoint source pollution. Nearby, Jim Collins showed examples of some of the macroinvertebrates found in the watershed's streams and wetlands and discussed how they help determine the ecological health of the watershed.

Jim Collins, N.D. Dept. of Health, explains how macroinvertebates can help determine stream health.

Lorraine Manz, N.D. Geological Survey, uses a stream table to show how streams and rivers function.

A stream table, demonstrated by Lorraine Manz of the North Dakota Geological Survey, gave participants a birds-eye view of how rivers and streams function. Shelly Doyle, district conservationist from the Natural Resources Conservation Service (NRCS), offered tips on backyard conservation, including information on

*(**Harmon Lake**...cont. on page 2)*

(***Harmon Lake**...cont. on page 2)*

Mark Glaser, N.D. Dept. of Health, demonstrates how a watershed works.

local trees, shrubs and native vegetation. Jay Van Dyke, NRCS project engineer, led a walking tour of the area, showing participants where the impoundment structure would be placed as well as other features of the lake area.

Construction of the Harmon Lake impoundment structure is targeted to begin in earnest next spring, with completion in 2007. Additional recreation features, including walking trails, shelters and access, will be started in 2005 and finished by 2011.

For more information on BMPs for properties near lakes, rivers or streams, contact the North Dakota Department of Health - Division of Water Quality at 701.328.5210.

Jim Collins presents information on watershed BMPs.

Improved Water Quality Is Goal of Brewer Lake Assessment Project

by Michelle Jezeski, Cass County Watershed Coordinator

Picnic area at Brewer Lake

Brewer Lake is a recreational impoundment on a tributary to the Rush River in northwestern Cass County. The impoundment was built in 1970 through the cooperative efforts of the North Dakota State Water Commission, the North Dakota Department of Health, the U.S. Bureau of Reclamation and the Rush River Water Resource District. Brewer Lake is publicly owned, with 1 percent of the shoreline developed, including a campground, picnic area, boat launch and swimming area. The Brewer Lake watershed covers 7,360 acres of prime farmland, most of which is cultivated.

The lake, its recreation area and watershed are home to various wildlife, fish and plant species. The wildlife management area surrounding the lake hosts abundant populations of deer and waterfowl. Bluegill, largemouth bass, smallmouth bass and walleye are among the fish species present in the lake.

Brewer Lake is not fully meeting its requirements of supporting a sustainable fishery. Previous studies have shown a history of poor water quality that resulted in numerous fish kills. As a result, Brewer Lake is listed on the 2004 Section 303(d) list of impaired waters needing Total Maximum Daily Loads (TMDLs). Fish and other aquatic biota and recreation are threatened in Brewer Lake because of nutrient enrichment, low dissolved oxygen and excessive sedimentation.

The Cass County Soil Conservation District (SCD) study of Brewer Lake includes a 2-year water quality assessment of the lake and its watershed. The goal of this project is to collect data for the development of a TMDL that, if implemented, will improve water quality for all beneficial uses. In addition, increased use of conservation and best management practices (BMPs) will enhance agricultural production within the watershed. A watershed model will be used to predict sediment and nutrient runoff potential within the watershed and subwatersheds to determine the effects of land management changes and use of BMPs.

For more information about Brewer Lake and/or this study, please contact the North Dakota Department of Health Division of Water Quality at 701.328.5210 or the Cass County SCD at 701.282.2157.

North Dakota Team Places 10th in North American Canon Envirothon Competition

Kenmare High School team #3 (l to r): Amber Jensen, Carter Norrie, Andrew Hager, Julie Johnson, Brock Zeitz, Joelle Hanson and Derek Belgarde

Kenmare's High School Team #3 placed 10th in the 2004 North American Canon Envirothon Competition. Team members included Amber Jensen (team captain), Carter Norrie, Andrew Hager, Julie Johnson and Brock Zeitz. Joelle Hansen was the team's advisor, and Derek Belgarde was the chaperone.

The team, sponsored by the Renville Soil Conservation District, represented North Dakota at the Canon Envirothon Competition held July 26 through Aug. 1, 2004, in Buckhannon, W. Va. Students from 52 states and provinces participated in the national competition. The Kenmare team earned its trip to West Virginia by winning the fifth annual North Dakota Envirothon competition held at Crystal Springs Camp May 13 through 15, 2004.

The national Envirothon is a natural resource competition for high school students. Teams consist of five members in grades nine through 12 representing schools, organizations or clubs. The teams study forestry, soil, water, wildlife and a current environmental issue.

Team members walk through five diverse outdoor testing sites, using hands-on techniques along with other effective educational tools to solve "real world" natural resource problems. Past issues addressed include urban nonpoint source pollution, wetland conservation, and introduced species and their effects on biodiversity.

The North Dakota Envirothon is sponsored by the Coalition for Conservation and Environmental Education (C^2E^2) through the support of a Section 319 Nonpoint Source Pollution Management Program grant. C^2E^2 was created to serve the shared interests of public and private agencies and organizations, businesses, teachers and individuals distributing and using environmental education materials.

The success of the Envirothon Program is due largely to the partnerships formed among local, state and federal agencies and organizations; private businesses; and North Dakota soil conservation districts.

Interested individuals can receive more information about the Envirothon by contacting Diane Olson, North Dakota Envirothon Coordinator, at 701.845.1674, or by email at ldranch@daktel.com.

Kenmare team #3 competed at the North Dakota Envirothon in May 2004.

Kenmare team #3 competing at 2004 North American Canon Envirothon

Goal of Powers Lake Watershed Project Is To Improve Lake Quality

by Kenny McDonald, Powers Lake Watershed Coordinator

Aerial view of Powers Lake

The Powers Lake Watershed Project received an EPA Section 319 grant for $538,000 in 2003. This unique project, managed by the Mountrail County Soil Conservation District (SCD), all started because the Powers Lake community wanted to improve a road. The road project turned into a lake improvement project when local residents began wondering what they could do to improve the water quality in Powers Lake.

Located in northwestern North Dakota, the 1,616-acre natural lake is used for many recreational activities, including camping and swimming. Powers Lake also provides habitat for fish and wildlife, and it is used as an outdoor "classroom" for the Powers Lake school district. With the goal of restoring the lake to its 1970s condition, local residents approached the North Dakota Department of Health in 1999 to help them develop a plan.

After brainstorming ideas, the locals, along with the assistance of the health department and high school students, began doing water and lake sampling, which included sampling in-lake water quality and water quality from runoff within the watershed. They also conducted a sediment survey and a land-use survey.

The city of Powers Lake conducted a water quality assessment, and the health department identified the cause of the problems that were affecting the water quality of Powers Lake. In-lake water quality data showed the lake was nitrogen-limited. The lake had nitrogen to phosphorous levels of 5:1 in 2001. The excess nutrient is phosphorous.

The Powers Lake Watershed Project included conducting sediment surveys.

The Powers Lake Watershed Project is in its first phase. During the first five years, a total of $931,000 will be provided for (1) educating residents and landowners and (2) placing conservation practices on the ground within the watershed. With these practices, project sponsors plan to reduce the amount of nitrogen, phosphorous and sediment that enters the lake by 50 percent. Some of the practices that will help to accomplish this goal are no-till farming, nutrient management and sediment dams, to name a few.

Planting trees is one example of BMPs used in the project.

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Project WET Provides Watershed Education

by Bill Sharff, WET Project Coordinator

A basin, drainage, watershed -- these terms all refer to an area of land drained by a river and its tributaries to a common outlet. A watershed includes all of the land, people, air, plants and animals within its borders. And although a watershed's boundaries are carved by nature and not by social or political forces, a watershed's well-being requires people with different perspectives, needs and lifestyles to work together because of their common connection to the watershed.

Every level of soil, plant, animal and human life depends on the health of our watersheds. Project WET *Explore Your Watershed* science- and social-based programs seek to inspire teachers and students to make a positive difference through personal actions to improve the condition of their own and other watersheds.

Missouri River Institute participants learn about how water users share water resources in a watershed.

Project WET materials and programs facilitate watershed education in North Dakota. Two four-graduate-credit Missouri River Watershed education programs were completed in July 2003 and 2004, lasting six days each. In addition, a two-graduate-credit Devils Lake watershed education program was completed in June 2004, which lasted three days. The focus of both programs was to identify the varied contemporary watershed management issues and concerns of these geographic areas

Joe Belford, Ramsey County commissioner, discusses Devils Lake watershed issues with workshop participants.

through the use of hands-on activities, field investigations, tours and professional presentations.

The Project WET watershed education programs seek to continue and expand watershed education by moving the Missouri River program further upstream to the Williston area. In alternate years, the Missouri River watershed education program will move to Bismarck. In addition, the Devils Lake watershed education program will be expanded to three credits. By moving watershed education programs around the state and addressing more local/regional issues and concerns, additional educators who may not normally attend a program can be reached.

In future years, multi-credit watershed education programs will be developed for the Souris and James/Sheyenne River watersheds. Historically, single-credit watershed education programs have also been developed and implemented statewide.

Missouri River, Devils Lake Programs are a Great Success

Fifty North Dakota K through 12 educators came face to face with Devils Lake and Missouri River watershed issues while attending the Project WET "Discover Today's Devils Lake" and "Missouri River Institute" watershed education programs this past summer. The two programs included environmental investigation segments, field tours, hands-on activities, environmental model demonstrations and personal journaling. A combined total of 39 resource professionals and scientists presented and led discussions on a wide array of contemporary watershed issues.

Feedback from participants was extremely positive. Michael Holen, grades 10 through 12 teacher from Bismarck felt the workshop was very educational. "As a westerner, I did not have intimate details about the problems with Devils Lake. Thank you for making this program available to teachers in North Dakota," Holen said.

Trent Bristol, N.D. Game and Fish Dept., and Paul Blumhardt, Bismarck City forester, discuss Missouri River woodland and forest issues.

*(**Project WET**...cont. on page 6)*

(***Project WET***...*cont. from page 5)*

Maureen Anderson, fifth-grade teacher from Washburn, said, "The whole Missouri River Institute was an eye opener. I now realize that it takes a lot of compromise, communication and discussion to get Missouri River issues resolved. I'm leaving the institute with a wealth of new knowledge."

Loretta Haas, grades seven through 12 teacher from Gackle, said, "I thought of the Missouri as just a river running through the state, not a resource important to everyone in so many ways. This class gave me a great appreciation for the river and its watershed and lots of wonderful ideas to use in my classroom."

The institutes were funded in part by an EPA Section 319 nonpoint source pollution grant, the North Dakota State Water Commission, local county water resource districts, soil conservation districts and local school districts. In addition, Missouri River Institute participants were able to observe a portion of Lake Sakakawea from pontoons donated by Captain Kit's Marina of Pick City, N.D.

Missouri River Institute participants

Devils Lake Workshop participants

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